REMARKS/ARGUMENTS

Claims 3-6, 8-9, 11-19, 21, 23, and 25-30 remain original. Claims 1-2, 7, 10, 20, 22, 24 have been amended. Claims 31-59 are added as new claims.

The applicants have rewritten some of the claims and added some new claims to define the invention more particularly and distinctly so as to overcome the technical rejections and define the invention patentably over the prior art.

Claims 1 and 7 were rejected by the Office Action under 35 U. S. C 102 as being anticipated by Siu (US 6,054,681). There is disclosed in Siu a cooking apparatus. However, Siu's stirrer **16** rotates around a HORIZONTAL AXIS and Siu's cooking chamber is divided into an upper half **12** and a lower half **11,** which are of substantially the same size. Stirrer **16** is disposed in between upper half **12** and lower half **11**. All these physical features render Siu's cooking apparatus disadvantageous.

1) Siu's stirrer **16** is large because it has to extend from one side of cooking chamber **11** to the other side laterally and also extend from the rotation axis to the cylindrical bottom of cooking chamber **11** vertically; a larger stirrer is inconvenient to handle by users and is more expensive to manufacture;
2) when Siu's stirrer **16** rotates to the upper portion of the cooking chamber, it is not in use for stirring foods; in other words, only when stirrer **16** is in the lower portion can it be used to stir foods;
3) when stirrer **16** rotates, it tends to push foods to one side of cooking chamber **11**; this makes it more difficult to decide the location where to dispose heating device **14**;
4) Siu's cooking chamber has to be cylindrical; a cylindrical container with a semi-cylindrical bottom is more difficult and expensive to manufacture than conventional containers;
5) Siu's cooking chamber has to be divided into an upper half **12** and a lower half **11**; the space in upper half **12** is virtually wasted because the foods cannot be more than the lower half volume (the foods have actually to be much less than

the lower half volume); therefore, Siu's cooking apparatus is inefficient in utilizing space;

6) a semi-cylindrical container takes a relatively bulky support case or mechanical support to be adapted to sit on a level counter top; and
7) food pieces tend to be splashed onto upper half **12**, making upper half **12** greasy; It is quite inconvenient to clean upper half **12**.

In the applicants' present invention, all the above-mentioned disadvantages associated with the specific design by Siu have been overcome.

In the applicants' frying apparatus, stirring device **108** is removably installed adjacent the bottom of container **102**, has a lower edge disposed above the bottom of container **102**, and is adapted to rotate around a substantially VERTICAL AXIS. Container **102** and lid **104** form the cooking chamber and container **102** comprises substantially the whole cooking chamber volume. In comparison with Siu's design, the applicants' frying apparatus has the following advantages.

1) Stirring device **108** is much smaller because it needs only to cover the radial span between the central axis and the side wall of container **102**;
2) Whenever stirring device **108** rotates, it stirs foods, no wasted stirrer motions;
3) when stirring device **108** stirs foods, food pieces tend to distribute uniformly with respect to heating device **114**;
4) the bottom of container **102** can be of many designs, e.g., flat, dome-like, cone-like, etc., and the manufacturing cost can be minimized;
5) foods can virtually fill the whole container, therefore, the applicants' frying apparatus can be much more space efficient, this is a very important advantage for cooking appliances given the limited space in kitchens.

Also, the applicants' frying apparatus divides a whole cooking process into numerous stirring cycles. Between every two consecutive stirring cycles, there is a dwell period of a predetermined length. This so-called "intermittent stirring operation" is intended to imitate human manipulation involved in stir-frying and innovatively solves the dilemma

in selecting an appropriate stirring speed (for low speeds, stirring device **108** cannot scoop up food pieces well, but for high speed, food pieces are agitated too much, for too long time in a continuous stirring operation). This is a typical dilemma as encountered in the design of WINDSHIELD WIPERS for automotives. In comparison with intermittent windshield wipers, the intermittent stirring operation of the applicants' invention is truly innovative. No prior art has ever identified the need of this intermittent stirring operation and explicitly proposed this solution.

In addition, proper venting is extremely important for frying foods, especially for stir-frying vegetables. Without proper venting, green vegetables tend to become yellowish, soggy, and limp. The steam generated during frying processes needs to be purged from the cooking chamber. On this account, the applicants proposed a venting device having a uniquely designed MULTI-STAGE FILTERING SYSTEM, which not only vents steam but also removes the grease content and odors in cooking fumes, such that the applicants' frying apparatus is much more people and home environment friendly.

Therefore, the applicants' invention has novel physical features and these novel physical features produce new and unexpected results and hence are unobvious and patentable over Siu.

The Novel Physical Features of Claim 1 Produce New And Unexpeced Results and Hence Are Unobvious and Patentable over Siu under § 103

The applicants submit that there are novel physical features in the applicants' invention as presented in claim 1 and these novel physical features are also unobvious and hence patentable under § 103 since they produce new and unexpected results over Siu.

The new features are: stirring device **108**, removably installed adjacent the bottom of container **102**, having a lower edge disposed above the bottom of container **102**, and

adapted to rotate around a substantially vertical axis; and control means for executing an intermittent stirring operation.

The new and unexpected results are: smaller stirring device; more uniform and efficient stirring operation; more efficient use of space, simpler and less expensive to manufacture; imitating human manipulation involved in stir-frying; and innovatively solved the dilemma in selecting an appropriate stirring speed.

Therefore, the applicants' frying apparatus is vastly superior to that of Siu's.

The novel features of the applicants' frying apparatus which effect these differences are, as stated, clearly recited in claim 1.

Dependent Claims 2-6 and 31-33 Are
A Fortiori and Patentable over Siu

Dependent claims 2-6 and 31-33 incorporate all the subject matter of claim 1 and add additional subject matter, which makes them a fortiori and independently patentable over Siu.

Claims 2-6 were rejected under 35 U. S. C 103 (a) as being unpatentable over Siu in view of Bukoschek et al (US 5,549,042). However, Bukoschek et al's domestic appliance **1** is provided for making ice cream. Making ice cream is a very different technical field than that of the applicants' invention, stir-frying foods.

On the other hand, Bukoschek et al's switch means **69** is provided to start a multiple modes of operation and the different modes of operation represent different speeds of CONTINUOUS rotation. Therefore, those skilled in the art would not be able to anticipate an INTERMITTENT stirring operation for a frying apparatus in view of Bukoschek et al's CONTINUOUS rotating operation for an ice cream maker.

Finally, although in the applicants' invention, common components, such as transistors, capacitors, and switches, etc., are used, a very unique circuit design (the way how

those components are connected) is proposed to execute an intermittent stirring operation for an automatic frying apparatus. The circuit design is unobvious because the problem or the need of an intermittent stirring operation was never before even recognized, not even mentioning being proposed and designed in the manner suggested.

Claim 4 introduces a control having a transistor **51**, a capacitor **55**, and a switch **53**. Switch **53** is responsive to the position of the power drive assembly through linkage **52** for conditioning the capacitor **55**. All these components are uniquely integrated as shown in FIG. 8 to achieve an intermittent stirring operation.

Claim 6 introduces a manually activated switch **60** to provide a unique feature for the applicants' frying apparatus. When switch **60** is pressed, a continuous stirring operation will over-ride the intermittent stirring operation. When switch **60** is released, the intermittent stirring operation will resume.

The Novel Physical Features of Claim 7 Produce New And Unexpeced Results and Hence Are Unobvious and Patentable over Siu under § 103

The applicants submit that there are novel physical features in the applicants' invention as presented in claim 7 and these novel physical features are also unobvious and hence patentable under § 103 since they produce new and unexpected results over Siu.

The new features are: stirring device **108**, removably installed adjacent the bottom of container **102**, having a lower edge disposed above the bottom of container **102**, and adapted to rotate around a substantially vertical axis; and a venting system having a multi-stage filtering device.

The new and unexpected results are: smaller stirring device; more uniform and efficient stirring operation; more efficient use of space, simpler and less expensive to

manufacture; better food quality; and much more people and home environment friendly.

Therefore, the applicants' frying apparatus is vastly superior to that of Siu's.

The novel features of the applicants' frying apparatus which effect these differences are, as stated, clearly recited in claim 7.

Dependent Claims 8-13 and 34-39 Are
A Fortiori and Patentable over Siu

Dependent claims 8-13 and 34-39 incorporate all the subject matter of claim 7 and add additional subject matter, which makes them a fortiori and independently patentable over Siu.

Claims 8 was rejected under 35 U. S. C 103 (a) as being unpatentable over Siu in view of Lin (US 6,615,708). Lin discloses a venting device including a filter. Lin's cooking system includes a main body **1** and a cap **2**. An inner pot **13** is disposed inside body **1**. A curved net is provided on body **1**. However, Lin's cooker fails to address the necessity of automating frying processes. Without frying process automation, especially at home, users have to stir the food or turn the food over by hands in the middle of frying processes. In this case, the generation of hot oil splash and the escape of oil vapor into the room are still inevitable.

On the other hand, it is a well-known fact that when fried using a frying pan like the one proposed by Lin, green vegetables tend to become yellowish, soggy, and limp because no fresh air is introduced into the inner pot and the foods inside are steam-cooked instead of being fried. The applicants' AUTOMATIC FRYING APPARATUS with a FORCED VENTING SYSTEM has overcome all the shortcomings in Lin's cooker.

In addition, the applicants' venting device is directly installed on the lid or the cooking pot, which makes the frying apparatus much simpler, more compact, and less expensive to manufacture.

Finally, the prior art references do not contain any suggestion (express or implied) that they be combined, or that they be combined in the manner suggested by the present applicants. The present invention has blazed a trail to solve a long-felt, long existing, but unsolved need by using a new principle of operation, rather than follow one.

Therefore, the applicants' invention has novel physical features and these novel physical features produce new and unexpected results and hence are unobvious and patentable over Lin.

Claims 10 was rejected under 35 U. S. C 103 (a) as being unpatentable over Siu in view of Bukoschek et al. However, as discussed previously in **Claims 1 and 7**, an intermittent stirring operation for an automatic frying apparatus is novel and unobvious, and is, therefore, patentable over both Siu and Bukoschek et al.

Claims 20 and 22 were rejected by the Office Action under 35 U. S. C 102 as being anticipated by McNair (US 2004/0065211). There is disclosed in McNair a cooking apparatus. However, McNair's cooking apparatus is intended for SAUCES AND SOUPS that tend to burn using conventional cooking/stirring means. McNair's cooking apparatus is not targeting food frying because its heating media is HEATED STEAM. Therefore, This reference is from a very different technical field than that of the applicants' invention.

Further more, kindly pointed out here, part **20** in McNair's cooking apparatus is not a sealing device, and instead it is a hollow cylinder installed on the bottom of vessel **2** (part of vessel **2**). In order to avoid leakage, cylinder **20** has to emanate upwards to substantially the open top of vessel **2**. The most important shortcoming of McNair's cooking apparatus is that the rotating power is transferred to stirring blade **5** from a substantially high location (the top of cylinder **20**). The power-transferring path is

significantly long, which renders the system bulky, unreliable, not robust, inconvenient to use, and more expensive to manufacture. McNair does not suggest (express or imply) A SEALING DEVICE of any types to tightly seal drive shaft **11** and cylinder **20**.

Finally, the part engaging drive shaft **21** and blade **5**, is a long tube. When the inside is contaminated by foods or oil, it is very difficult to clean.

On the other hand, the applicants propose a sealing assembly **308** for sealing between shaft **304** and container **302**, as shown in FIG. 14, Seal assembly **308** comprises a seal flange **310**, a gland nut **312**, and compression packing **314**. Packing **314** is squeezed against drive shaft **304** and the bottom of container **302** to generate a tight seal. Sealing assembly **308** is installed directly on the bottom of container **302** on the outside, as shown in FIG. 14, or on the inside, as illustrated in FIG. 15.

There is an important advantage with the design illustrated in FIG. 15. For most applications, compression-packing **314** is disposed higher than the oil level, such that the sealing surface is not immersed in cooking oil or hot liquids. Therefore, the requirement on sealing assembly **308** is significantly reduced.

Because of the addition of sealing assembly **308**, driving shaft **304** can be significantly shorter. It does not have to extend upwards to a substantially high position as in McNair's cooking apparatus. The applicants' sealing assembly **308** is in SUBSTANTIAL PROXIMITY of the central bottom of container **302**.

Therefore, the applicants' invention has novel physical features and these novel physical features produce new and unexpected results and hence are unobvious and patentable over McNair.

The Novel Physical Features of Claim 20 Produce New And Unexpeced Results and Hence Are Unobvious and Patentable over McNair under § 103

The applicants submit that there are novel physical features in the applicants' invention as presented in claim 20, and these novel physical features are also unobvious and hence patentable under § 103 since they produce new and unexpected results over McNair.

The new features are: a sealing assembly **308** installed directly on the bottom of container **302** on the outside, or on the inside; a compression packing **314** adapted to be squeezed against driving shaft **304** and the bottom of container **302** to generate a TIGHT SEALING.

The new and unexpected results are: a simplified and more robust power-transferring system; and a less expensive container, which is also more convenient to use, and a more compact and reliable sealing.

Therefore, the applicants' frying apparatus is vastly superior to that of McNair's.

The novel features of the applicants' frying apparatus which effect these differences are, as stated, clearly recited in claim 20.

Dependent Claims 21-25 and 42-59 Are
A Fortiori and Patentable over McNair

Dependent claims 21-25 and 42-59 incorporate all the subject matter of claim 20 and add additional subject matter, which makes them a fortiori and independently patentable over McNair.

Claims 22 was rejected under 35 U. S. C 102 (e) as being anticipated by McNair. As discussed previously in **Claims 20 and 22**, a sealing assembly, which is installed directly on the bottom of container **302** on the outside, or on the inside, and tightly seals the shaft and the bottom of the container, is novel and unobvious, and is, therefore, patentable over McNair.

Claims 24 was rejected under 35 U. S. C 103 (a) as being unpatentable over McNair in view of Siu. As discussed previously in **Claims 1 and 7**, an intermittent stirring operation for an automatic frying apparatus is novel and unobvious, and is, therefore, patentable over both McNair and Siu.

Dependent Claims 40-41 Are
A Fortiori and Patentable

Dependent claims 40-41 incorporate all the subject matter of claim 14 and add additional subject matter, which makes them a fortiori and independently patentable.

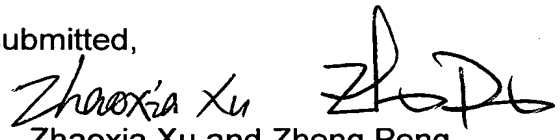
Conclusion

For all the above reasons, the applicants submit that the claims are now in proper form and that the claims all define patentably over the prior art. Therefore the applicants submit that this application is now in condition for allowance, which action the applicants respectfully solicit.

Conditionally Request For Constructive Assistance

The applicants have amended some of the claims of the application so that they are proper, definite, and define novel structures, which are also unobvious. If, for any reason, this application is not believed to be in full condition for allowance, the applicants respectfully request the constructive assistance and suggestions of the examiner pursuant to M. P. E. P. § 2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible.

Very respectfully submitted,



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